**Inputs:**

mem\_read

mem\_write

ready

hit

**Outputs:**

stall

main\_read

main\_write

refill

update

**FSM:**

0010 / 11000

0011 / 11001

0100 / 00000

**idle writing**

0001 / 00011 1000 / 0000

**reading**

0000 / 100000

0010 / 11001

**Main\_mem\_read**